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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/757,246	01/10/2001	Yu-To Chen	RD-27,669	6571

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GENERAL ELECTRIC COMPANY
GLOBAL RESEARCH CENTER
PATENT DOCKET RM. 4A59
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EXAMINER

MAHATAN, CHANNING

ART UNIT	PAPER NUMBER
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1631

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DATE MAILED: 10/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/757,246

Applicant(s)

CHEN ET AL.

Examiner

Channing S. Mahatan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1 Sheet.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: Attachment for PTO-948.

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DETAILED ACTION

ART UNIT DESIGNATION

The Group and/or Art Unit designated for this application has changed. Applicants are hereby informed that future correspondence regarding this application should be directed to Group Art Unit 1631.

OBJECTION BY DRAFTSMAN

Applicants are hereby notified that the required timing for correction of drawings has changed. See the last 6 lines on the sheet, which is attached, entitled "Attachment for PTO-948 (Rev. 03/01 or earlier)". Due to the above notification Applicant is required to submit drawing corrections with the time period set for responding to this Office action. Failure to respond to this requirement may result in abandonment of the instant application or a notice of a failure to fully respond to this Office action.

CLAIMS UNDER EXAMINATION

Claims herein under examination are claims 1-14.

Claims Rejected Under 35 U.S.C. § 112 1st Paragraph

The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-14 are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

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LACK OF ENABLEMENT

Factors to be considered in determining whether a disclosure would require undue experimentation have been summarized in Ex parte Forman, 230 U.S.P.Q. 546 (B.P.A.I. 1986) and reiterated by the Court of Appeals in In re Wands, 8 U.S.P.Q. 2d 1400 at 1404 (C.A.F.C. 1988). The factors to be considered in determining whether undue experimentation is required include: (1) the quantity of experimentation necessary, (2) the amount or direction presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims. The Board also stated that although the level of skill in molecular biology is high, the results of experiments in genetic engineering are unpredictable. While all of these factors are considered, a sufficient amount for a *prima facie* case are discussed below.

Claims 1-14 are rejected under 35 U.S.C. § 112, first paragraph. It is acknowledged the claimed system and method explores/searches “an experimental space” by way of “a hybrid learning system”. However, absent is the intended goal that would be achieved through the implementation of the instantly claimed system and method. For instance, after “performing a supervised learning process on the selected points an output is obtained: 1) what does the output information represent/mean? 2) what does one do with the output information? While it is acknowledged claim 4 states “the output of the system is a set of elements that yield a highest turnover (TON) and selectivity”, however, absent from the ‘original’ disclosure is a criteria/definition that establishes what a “turnover number (TON)” and “selectivity” is. In such absence it is thus unclear what the output represents (Refer to below 112 2nd Paragraph

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Rejection). Thus, one skilled in the art would not understand what the information means and what to do with the information after the generation of the output without an intended goal. No guidance, direction, or examples are provided such that one of ordinary skill in the art would have known how to use the claimed invention.

Claims Rejected Under 35 U.S.C. § 112 2nd Paragraph

The following is a quotation of the second paragraph of 35 U.S.C. § 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-14 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

VAGUE AND INDEFINITE

Claim 1 (lines 5-6) and all claims dependent therefrom recite "...to use selection techniques to select a set of evaluation points..." which is vague and indefinite. It is unclear what "selection techniques" are utilized in the claimed invention. While the "selection techniques" as claimed are to select a set of evaluation points, absent is any indication of what these "selection techniques" are. Clarification of the metes and bounds, via clearer claim language, is requested.

Claims 1 (lines 14-15), 5 (line 22), and all claims dependent therefrom recite "wherein operation of the data mart, search engine and point evaluation mechanism are operated a plurality of times such that a repeating process is undertaken to obtain a finalized output"/"obtaining an output" which is vague and indefinite. It is unclear what the "output" represents, via an intended goal (Refer to above 35 U.S.C. § 112 1st Paragraph Rejection).

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Further, absent is an indication/criteria at which point the repeated process is halted, thereby obtaining a final output. Clarification of the metes and bounds, via clearer claim language, is requested.

Claim 4 (line 3) recites the “the output of the system is a set of elements that yield a highest turnover (TON) and selectivity” which is vague and indefinite. Instant claim 4 indicates the production of a set of elements (output) that yield a highest turnover number (TON) and selectivity, however, it is unclear as to what a “turnover number (TON)” and “selectivity” is. Absent from the ‘original’ disclosure is a definition for a “turnover number (TON)” and “selectivity” (Refer to above 35 U.S.C. § 112 1st Paragraph Rejection). Clarification of the metes and bounds, via clearer claim language, is requested.

Claim 10 (lines 2-3) recite the step of “partitioning the experimental space into cluster of points having similarities” is vague and indefinite. The phrase implies the “experimental space” is partitioned into cluster of points based upon a similarity criteria, however, such a criteria is absent from the instant claim language. Applicants can resolve this issue by particularly pointing out what the criteria for “similarities”: 1) limited to requiring some value; or 2) inclusive of a random arbitrary value. In the absence of a similarity criterion one would not know what the parameters are to partition experimental space into cluster of points that are “similar” versus “non-similar”. Clarification of the metes and bounds, via clearer claim language, is requested.

Claims 10 (lines 7 and 9-10) and 11 (lines 7 and 9-10) recite the step “performing at least one of actual physical experiments”/“at least actual experiment” which is confusing. It is unclear by as to the limitation(s) implied by Applicants regarding an “actual physical experiment” versus

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a “non-actual physical experiment”? Is a “physical experiment” performed or not? Clarification of the metes and bounds, via clearer claim language, is requested.

Claim 13 (line 2) and all claims dependent therefrom recite the phrase “a new improved model” which is vague and indefinite. It is unclear as to the metes and bounds “new improved” is to encompass, however, Applicants can resolve this issue by particularly pointing out the criteria/range which encompasses “new improved”. Clarification of the metes and bounds, via clearer claim language, is requested.

MISSING ESSENTIAL STEPS

Claims 2 (line 2), 7 (lines 1-2), and all claims dependent are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See M.P.E.P. § 2172.01. Claims 2 and 7 recite the limitation “results of the physical experiment are supplied to the data mart”. However, omitted are the steps/procedures by which the results are supplied to the data mart (i.e. converted into numerical values for the data mart and then inputted). For example, if a Western blot (physical experiment) is performed and results in numerous protein bands by what steps are these bands supplied to the data mart. Clarification of the metes and bounds, via clearer claim language, is requested.

LACK OF ANTECEDENT BASIS

Claim 13 recites the limitation “selection processes” in line 1. There is no clear antecedent basis for this limitation in claim 5 for “selection processes”. It is acknowledged that claim 5 recites a selection step (e) (“selecting a cluster based on the scoring”), however, fails to indicate selection as a plurality (i.e. selection processes).

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No Claims Are Allowed.

EXAMINER INFORMATION

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993) (See 37 C.F.R. § 1.6(d)). The CM1 Fax Center number is either (703) 308-4242 or (703) 305-3014.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Channing S. Mahatan whose telephone number is (703) 308-2380. The examiner can normally be reached on M-F (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael P. Woodward, Ph.D., can be reached on (703) 308-4028.

Any inquiry of a general nature or relating to the status of this application should be directed to Legal Instruments Examiner, Tina M. Plunkett, whose telephone number is (703) 305-3524 or to the Technical Center receptionist whose telephone number is (703) 308-0196.

Date: *September 30, 2003*
Examiner Initials: *CSM*

Marianne P. Allen
MARIANNE P. ALLEN
PRIMARY EXAMINER
-GROUP 1800
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